REMARKS/ARGUMENTS

Claims 1-3, 10, 14-23, 27, 28, 33-56, 59-64, 67, 68, 70-105, 107, 108, 110, 120-129, and 132-145 are pending. Claims 4-9, 11-13, 24-26, 29-32, 58, 65, 66, 69, and 111-119 have been withdrawn.

Please note that the Applicants have appointed new representatives, namely the practitioners at Customer Number 021569. The Power of Attorney form authorizing those representatives to prosecute this application in enclosed in this communication.

In this Response claims 1, 33, 35, 37, 59, 132, 139, 142, 144, and 145 have been amended, and claims 44-56, 133, and 143 have been canceled.

Objections to the Specification

The Examiner has objected to the specification, alleging that the amendment filed by the Applicants on October 19, 2004 introduced new matter into the disclosure. More specifically, the Examiner objected to the amendment to the specification that replaced the reference to Provisional Application No. 60/008,660 in the original application with a reference to Provisional Application No. 60/130,992. The Examiner also objected to the Applicants' transfer of subject matter from Provisional Application No. 60/130,992 into the specification. Applicants acknowledge that the Examiner has asked that the material from Provisional Application No. 60/130,992 be removed from the specification, and that issues related to "incorporation by reference" have been discussed at great length during the prosecution of the pending application. Nevertheless, Applicants respectfully request that the Examiner consider the following arguments, which Applicants believe demonstrate that material from Provisional Application No. 60/130,992 can be transferred into the specification.

Applicants believe that there are two separate legal issues regarding the relationship between the pending application and Provisional Application No. 60/130,992. The first issue is whether the pending application is entitled to claim priority from Provisional Application No. 60/130,992, and the second issue is whether material from Provisional Application No. 60/130,992 can be transferred into the specification. The two issues are governed by different sections of the M.P.E.P., and involve different legal standards.

The issue of whether pending application is entitled to claim priority from Provisional Application No. 60/130,992 is governed by M.P.E.P. § 201.11. Under the terms of subsection V of M.P.E.P. § 201.11 (starting on pg. 200-68 of the August 2005 revision of the M.P.E.P.) and 37 C.F.R. 1.78(a)(5), applicants are entitled to make a benefit claim to a prior provisional application anytime during the pendency of this pending application. The additional time limits on making benefit claims that are specified in subsection V of M.P.E.P. § 201.11 do not apply to the pending application because this application was filed before November 29, 2000. *See also* 37 C.F.R. 1.78(a)(5)(ii). Therefore, applicants are entitled to have the pending application claim benefit to Provisional Application No. 60/130,992, which was filed on April 26, 1999. Please note that the benefit claim satisfies the requirements of subsection IV of M.P.E.P. § 201.11 (starting on pg. 200-67 of the August 2005 revision of the M.P.E.P.) and 37 C.F.R. 1.78(a)(5)(ii), both of which specify that an application claiming benefit to a prior-filed application (in this case Provisional Application No. 60/130,992) must have at least one inventor in common with the prior-filed application. Indeed, the inventive entities for Provisional Application No. 60/130,992 and the pending application are identical. Under the terms of subsection III(F) of M.P.E.P. § 201.11 (starting on pg. 200-66 of the August 2005 revision of the M.P.E.P.), the specification of this pending application must be amended to include a reference to Provisional Application No. 60/130,992 in order for the PTO to issue a corrected filing receipt. The last paragraph of subsection III(F) of M.P.E.P. § 201.11 makes it clear that "incorporation by reference" is a different issue than priority by stating that a successful benefit claim does not necessarily allow an applicant to incorporate material into the application from the priority document. Therefore, applicants believe that the issues of priority and incorporation are separate, and that the two issues can be resolved independently. Indeed, it appears that the Examiner reached the same conclusion in the Office Action mailed 2/9/2005 since that Office Action states that Applicants' priority claim to Provisional Application No. 60/130,992 has been accepted. In the Final Office action (mailed 8/25/2005), however, the Examiner referred to Provisional Application No. 60/008,660 as the priority document. Applicants believe that this reference was made in error since it was made during an argument about the confusingly similar issue of "incorporation by reference". In summary, Applicants believe that there should be no disagreement on the issue of priority. The specification must be amended to refer to Provisional

Application No. 60/130,992. Whether that reference to the priority document will contain "incorporation by reference" language or not will depend on the disposition of the separate "incorporation by reference" issue.

The issue of whether Applicants are entitled to transfer material from the priority document into the specification is governed by M.P.E.P. § 608.01(p). It is critical to note that the rules in the current version of M.P.E.P. § 608.01(p) do not apply to the pending application because those rules are based on the provisions of 37 C.F.R. 1.57, which only applies to applications filed on or after September 21, 2004. *See* M.P.E.P. § 201.17, subsection II(A), which is on pg. 200-100 of the August 2005 revision of the M.P.E.P. Note it is generally true that new rules, such as new rule 37 C.F.R. 1.57, only apply to applications filed after the rule has been enacted. In other words, the PTO typically avoids changing the rules in the middle of the game. That is why M.P.E.P. § 201.11 (which was cited in the above priority discussion) states that the time limits in the current version of 37 C.F.R. 1.78 do not apply to applications filed before November 29, 2000, and why M.P.E.P. § 201.17 states that the restrictions in the current version of 37 C.F.R. 1.57 do not apply to applications filed before September 21, 2004. Therefore, we must look at the "incorporation by reference" rules as they existed when the pending application was filed to determine whether applicants are entitled to transfer material from Provisional Application No. 60/130,992 into the specification of the pending application. A copy of the version of M.P.E.P. § 608.01(p) that was in effect when the pending application was filed is enclosed in this communication for the Examiner's convenience.

The legal standards that should be applied to the "incorporation by reference" issues in the pending application must be extracted from the provisions of the M.P.E.P. as it existed when the pending application was filed. As previously mentioned, the current version of M.P.E.P. § 201.11 cites *Dart Indus. v. Banner*, 636 F.2d 684, 207 USPQ 273 (C.A.D.C. 1980) for the proposition that a "reference to [a] prior application cannot include an incorporation by reference statement of the prior application unless an incorporation by reference statement of the prior application was presented upon filing of the application." The version of M.P.E.P. § 201.11 in effect when the pending application was filed (a copy is enclosed for the Examiner's convenience) does not cite *Dart*. Nevertheless, since *Dart* was decided before the pending application was filed, *Dart* would still apply to the pending application if the facts in *Dart* were

similar enough to the facts pertaining to the pending application. But, since the facts pertaining to the pending application are easily distinguished from the facts in *Dart*, the holding in *Dart* does not apply. The most important difference between the pending application and the application at-issue in *Dart* is that the original version of the pending application contains an "incorporation by reference" statement that did not refer to the correct document, while the original application in *Dart* did not contain any attempt whatever to incorporate another document. *Dart* 636 F.2d at 677(applicant was seeking to add "incorporation by reference" language in a reissue proceeding). The version of M.P.E.P. § 608.01(p) that was in effect when the pending application was filed specifies that the law pertaining to an "incorporation by reference" statement that does not correctly refer to a document is set forth in *In re Fouche*, 439 F.2d 1237, 169 USPQ 429 (C.C.P.A. 1971). It is important to note that the Court in *Fouche* specifically states that a situation in which an original application does not contain any attempt whatever to incorporate another document, which was the situation in *Dart*, presents separate legal issues than those presented when an original application contains an "incorporation by reference" statement that does not correctly refer to a document. See *Fouche*, 439 F.3d at 1239. That is why the decisions in *Dart* and *Fouche* are not in conflict. The fact that both *Dart* and *Fouche* are still good law is confirmed by the citation of both cases in the current version of the M.P.E.P. *See* the latest revisions of M.P.E.P. § 201.11 (citing *Dart*) and M.P.E.P. § 608.01(p) (citing *Fouche* at the bottom of the first column on pg. 600-92). Another important difference between the application at-issue in *Dart* and the pending application is that the original application in *Dart* did not contain any "incorporation by reference" statement at all. Instead, the applicants in *Dart* attempted to add an "incorporation by reference" statement during a reissue proceeding, well after the original application had issued. In other words, in *Dart* the issue of whether "incorporation by reference" language could be added arose during reissue, not during prosecution. In summary, Applicants believe that the controlling legal authority for the "incorporation by reference" issues for the pending application is the decision in *Fouche*.

Applicants respectfully assert that applying the reasoning in *Fouche* to the facts of the pending application inevitably leads to the conclusion that Applicants are entitled to transfer material from Provisional Application No. 60/130,992 into the specification. In *Fouche*, the

PTO objected to an applicant's attempt to incorporate essential material through a reference to an "Application No. _____". *Fouche*, 439 F.2d at 1238. The reference in *Fouche* not only lacked an application number, it also failed to specify the filing date of the referred-to application. The material the applicants were trying to incorporate was "essential" in that it was required to provide support for claims under the first paragraph of 35 U.S.C. § 112. *Id.* Even though the reference to the application to be incorporated by reference was almost as sparse as it could possibly be, the Court in *Fouche* held that the reference in the specification to the unnamed application adequately incorporated the disclosure of that unnamed application into the specification. *Fouche*, 439 F.2d at 1240. To reach that conclusion, the Court followed the following line of reasoning. First, the court reasoned that it would be unreasonable to read the reference to the unnamed application as pertaining to anything but an earlier or concurrently filed U.S. patent application. *Id.* Second, the unnamed application contained enough information to support the claims that were rejected under the first paragraph of 35 U.S.C. § 112. *Id.* Third, the subject matter in the unnamed application was similar to the subject matter in the application in which the unnamed application was to be incorporated. *Id.* Finally, there had been no showing by the PTO that there existed any other application to which the referring language could have pertained. *Id.*

When the reasoning in *Fouche* is applied to the facts of the pending application, it becomes clear that Applicants are entitled to transfer material from Provisional Application No. 60/130,992 into the specification. First, Provisional Application No. 60/130,992 was filed before the pending application, and was pending (i.e. had not reached its one-year expiration date) when the pending application was filed. Indeed, the facts pertaining to the pending application are even more compelling than the facts in *Fouche* because the pending application refers to a provisional application that was to be relied on for priority as well as incorporated by reference. *See* Original Application, pg. 2 lines 2-4. Therefore the provisional application to be incorporated by reference must have been filed within a year of the filing date of the pending application. That is consistent with the April 26, 1999 filing date for the provisional application specified in the Original Application. So, there is a date in the pending application that makes identification of the provisional application being incorporated by reference even easier than it was in *Fouche*. Second, Provisional Application No. 60/130,992 contains enough information to

support the claims the Examiner has rejected under the first paragraph of 35 U.S.C. § 112. Third, the subject matter in Provisional Application No. 60/130,992 is similar, if not identical, to the subject matter in the pending application. Finally, the PTO cannot show that there was any other application to which the original specification could have possibly been referring. The provisional application number cited in the original application, Provisional Application No. 60/008,660, could not have been correct since that provisional was filed more than a year before the pending application. Similarly, the provisional application cited in the Office Action Reply dated 6/9/2005, Provisional Application No. 60/132,992, could not have been correct since (as the Examiner noted) that provisional application has a different filing date, inventive entity, and title than the pending application. The only provisional application that the Original Application could have possibly been referring to is Provisional Application No. 60/130,992 since that provisional application has a filing date that is within one year of the filing date of the pending application, exactly the same inventive entity as the pending application, the same title as the pending application, and subject matter that is essentially identical to the subject matter of the pending application. Applicants do not believe that it is possible for the PTO to show that there existed any other application to which the referring language could have pertained. Therefore Applicants assert that under the criteria set forth in *Fouche*, the introduction of subject matter from Provisional Application No. 60/130,992 into the specification does not constitute the introduction of new matter. Accordingly, Applicants respectfully request that the objection to the specification under 35 U.S.C. § 132 be withdrawn.

Claim Rejections under the First Paragraph of 35 U.S.C. § 112

Claims 61, 64, 67, 68, 77, 78, 87, 89, 96, 102, 108, 110, and 133-138 have been rejected under the first paragraph of 35 U.S.C. § 112 as allegedly containing subject matter that was not supported by the specification. Applicants believe that there would be no basis for rejecting those claims under the first paragraph of § 112 if Applicants were allowed to make the amendments to the specification that the Examiner has objected to under 35 U.S.C. § 132. Since Applicants believe that the objections to the specification set forth in the Final Office Action should be withdrawn, and that the as-amended specification provides support for the rejected claims, Applicants respecfully request that the rejection of claims 61, 64, 67, 68, 77, 78, 87, 89, 96, 102, 108, 110, and 133-138 under the first paragraph of 35 U.S.C. § 112 be withdrawn.

Claim Rejections under 35 U.S.C. § 101

Claims 44-49, 52-56, 133-138, and 143 have been rejected under 35 U.S.C. § 101 as allegedly containing non-statutory algorithm type subject matter. To expedite prosecution of this pending Application, Applicants are cancelling claims 44-56, 133-138, and 143. Applicants are not conceding that the rejection of those claims is proper, and Applicants reserve their rights to prosecute the subject matter in the cancelled claims in future continuation applications. Note that Applicants have cancelled claims 50-51 even though the Examiner did not specifically reject those claims. Claims 50 and 51 depend from rejected claim 46, and are thus directed toward the same subject matter. Note that even with the cancellation of those twenty claims, the pending application still contains ninety-one claims, ten of which are independent.

Claim Rejections under 35 U.S.C. § 102

Claims 54-56 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Gschwend et al., "Molecular Docking Towards Drug Discovery," JOURNAL OF MOLECULAR RECOGNITION, VOL. 9, 175-186 (1996)("Gschwend"). Since Applicants have already cancelled claims 54-56, the § 102(b) rejection of those claims is moot. Once again, those claims are being cancelled only to expedite the prosecution of this pending Application. Thus cancellation of claims 54-56 should not be seen as a concession to the validity of the § 102(b) rejection of claims 54-56. Furthermore, Applicants reserve their rights to prosecute the cancelled claims in future continuation applications.

Claim Rejections under 35 U.S.C. § 103

Claims 1-3, 10, 14-23, 27, 28, 33-53, 59-64, 70-76, 78, 80, 89-91, 93, 94, 97-105, 120, 121, 124, 125, 127-129, and 132-143 stand rejected as allegedly being unpatentable over the combination of Goto et al., "LIGAND: chemical database for enzyme reactions," BIOINFORMATICS, Vol. 14 no. 7, pgs. 591-599 (1998) ("*Goto*") and Antman et al., "A Comparison of Results of Meta-analyses of Randomized Control Trials and Recommendations of Clinical Experts," JAMA, Vol. 268, No. 2, pgs 240-248 (July 8, 1992) ("*Antman*"). All of the pending independent claims, especially after the amendments made in this response, are not obvious in light of the combination of *Goto* and *Antman*.

Before comparing the pending claims to the combination of *Goto* and *Antman*, Applicants would like to provide a brief overview of those two references. *Goto* describes a number of interrelated databases that part of something called the "KEGG" project. *See* the "LIGAND as part of KEGG" section of *Goto*, which starts on pg. 597 col. 2. The goal of the KEGG project is to provide a computerized analysis tool for the study of the functional aspects of living systems. *Id.* The organization of the databases in the KEGG project is shown in Table 5 on pg. 598 of *Goto*. The KEGG project includes three major databases: the KEGG database, the LIGAND database, and the BRITE database. The KEGG database contains information about the metabolic pathways in living organisms. *Id.* The KEGG database contains three component databases: the PATHWAY component that contains information about metabolic and regulatory pathways; the GENES component that contains the gene catalogs for a variety of organisms; and the GENOME component that contains genome maps for a variety of organisms. The LIGAND database contains information about the enzymatic reactions that take place in living organisms. The LIGAND database contains two component databases: the ENZYME component that contains information about enzymes and enzymatic reactions; and the COMPOUND component that contains information about the chemical compounds that interact with enzymes. *See also Goto* pg. 593 col. 2. The third database, the BRITE database, contains information about non-enzymatic reactions that take place within living organisms. *Goto* pg. 597 col. 2. By all appearances, the content of all of the databases described in *Goto* is limited to information about the functioning of living systems. It appears that the ultimate function of the KEGG system is to correlate biological functions with genetic sequences. *Goto* pg. 598 col. 1 (immediately after Table 5).

Antman does not describe a computer database *per se*. Instead, the authors of *Antman* simply review the results from a number of studies (randomized control trials, or RCTs) of treatments for myocardial infarction in order to describe the advances being made in the field. *Antman*, pg. 240. It appears that the authors simply collected the results of RCTs from a number of sources (including MEDLINE, journals, books, and medical texts), and applied the "meta-analysis" technique to analyze the data. A "meta-analysis" is a statistical technique used to synthesize the available literature about a topic. See, e.g. Wikipedia article on Meta-Analysis (a printout of the article is enclosed for the Examiner's convenience). The only connection of the

Antman reference to the concept of databases appears to be that the authors used the online MEDLINE database as a source of information for the article. MEDLINE, however, is a completely different type of database than those described in the pending application. As the Examiner probably realizes – since it appears that the Examiner has accessed MEDLINE – the data in MEDLINE database consists of abstracts of technical articles. The abstracts have been indexed so that they can be searched by MeSH (Medical Subject Heading) keywords, words in abstract and title of the article, author names, date of publication, etc. The actual data contained within the technical articles listed in MEDLINE are not available in a format compatible with the databases disclosed in the pending application.

In contrast to *Goto* and *Antman*, the specification of the pending Application discusses the use of multi-dimensional databases to aid in drug discovery and development. *Original Application* pg. 2 lines 8-15. The "Description of the Related Art" portion of the specification, which begins on pg. 2 of the *Original Application*, outlines the critical steps in the drug discovery process. The first two steps are (1) sequencing DNA within segments of the human genome, and (2) identifying the genes within the genome that are associated with specific diseases or biological functions. For the purposes of this discussion, let us refer to the first two steps in the drug discovery process as the "functional genomic" part of the process. It appears that the KEGG database in *Goto* is specifically designed to help carry out that functional genomic portion of the drug discovery process. It also appears that *Goto* does not describe any of the remaining seven steps in the drug discovery process, which are (3) producing the protein encoded by the genes identified in the first two steps of the process, (4) finding chemical compounds that interact with that protein (which is referred to as the "molecular target") in a process known as "screening", (5) seeing whether the compounds that interact with the molecular target have the potential to produce side effects, (6) evaluating other properties (e.g. toxicity, absorption, distribution, metabolism, excretion) of the compounds that interact with the molecular target and that are unlikely to produce side effects, (7) identifying the most promising compounds based on an empirical assessment of the results from steps (4)-(6) and producing chemical analogs of those compounds, (8) retesting the analogs through steps (4)-(6) and performing the assessment in step (7) until the optimal compounds are identified, and (9) subjecting the optimal compounds to further preclinical and clinical testing. For the purposes of

this discussion, let us refer to the final seven steps in the drug discovery process as the "compound selection" portion of the drug discovery process. Embodiments of the invention described in the pending application are directed toward managing, collating, interpreting, and utilizing the vast amount of data generated in steps (4)-(6) of the drug development process, and combining those data with other useful data, in order to improve the ability of researchers to identify the optimal compounds in steps (7) and (8) for preclinical and clinical testing. Examples of the other useful data that may be employed in embodiments of the invention are results generated during previous drug development efforts, results from the technical literature, chemical structure information about the molecular target and/or chemical compounds, and results from previous clinical and preclinical studies. At best, *Antman* represents a correlation of results from previous clinical studies. *Altman* does not appear to even hint at the concept of using a multi-dimensional database to facilitate drug development. Unlike the types of automated analyses that can be carried out by embodiments of the invention, the data in *Antman* appear to have been manually collected and analyzed.

The *Goto* and *Antman* references fail to disclose anything like the concept of using multi-dimensional databases in the compound selection portion of the drug discovery process, which is one of the fundamental concepts described in the pending application, Nevertheless, Applicants realize that the main issue that needs to be resolved is whether the subject matter of the claims is patentably distinct from those references. It appears that the Examiner is concerned that the databases described in *Goto* are similar enough to the subject matter in the claims (as they existed before the amendments made in this response) that the claims are obvious in light of the combined disclosures of *Goto* and *Antman*. It appears that the main source of this concern is that *Goto* describes databases that are similar to the databases specified in the claims (as they existed before the amendments made in this response) in that both set of databases contain information about chemical compounds, molecular targets, and the interactions between the compounds and targets. Although Applicants do not necessarily agree with the rationale behind § 103(a) rejections based on the combination of *Goto* and *Antman*, for example Applicants respectfully disagree with the assertion that one skilled in the art would be motivated to combine the disclosures of *Goto* and *Antman*, Applicants have amended the rejected independent claims in a manner that should address the Examiner's concerns. Please note that if

an independent claim is patentable over a combination of references, then the claims dependent from that independent claim (which contain all of the limitations of the independent claim but are even narrower in scope) are also patentable over that combination of references. Therefore Applicants submit that the amendments made to the rejected independent claims that have not been cancelled (claims 1, 33, 35, 37, 59, 132, 139, and 142) should make all of the claims rejected over the combination of *Goto* and *Antman* allowable over those references.

The amendments made in this response limit the scope of the claims to computer systems (including memories) that contain information relevant to the compound selection portion of the drug discovery and development. Exactly the same amendments were made to all of the rejected independent claims that have not been cancelled (claims 1, 33, 35, 37, 59, 132, 133, 139, and 142), so the following discussion applies to all of those claims. The databases in *Goto* only appear to contain information about the natural processes (which could include disease) that occur in living organisms. In other words, *Goto* does not appear to disclose databases that contain information about the effects of externally introduced chemical compounds (such as compounds being evaluated for their potential use as drugs) on those natural processes. To accentuate this difference between *Goto* and the compound selection processes described in the pending application, the independent claims have been amended so that the term "screening results" (or similar terms such as "data corresponding to tests" or "results of tests" or "records corresponding to tests of interactions") is replaced with the term "results from *in vitro* assays" (or similar terms such as "data corresponding to *in vitro* assays" or "records corresponding to *in vitro* assays"). Support for this amendment can be found, among other places, on pg. 5 lines 4-6. Anyone skilled in the relevant art would recognize that *in vitro* assays are performed in artificial environments such as a microplate or test tube, and not in living organisms. *Goto* only appears to discuss *in vivo* processes, and does not appear to disclose databases that contain information generated in *in vitro* assays. The amendment effectively limits the scope of the claims to computer systems comprising multi-dimensional databases that are relevant to the compound selection portion of the drug discovery process. Note that *in vitro* assays such as high throughput screening assays or profiling assays are standard steps used in the compound selection of the drug development process. Since the content of the databases described in *Goto* is limited to information relevant to naturally occurring processes in living

systems, and since neither *Goto* nor *Antman* even hint that their teachings can be adapted to compound selection, Applicants assert that the claim amendments eliminate the basis for the obviousness rejection based on the combination of *Goto* and *Antman*.

Applicants would like to point out another feature of some of the rejected independent claims (specifically claims 1, 35, 37, 139, and 142) that should further distinguish those claims from the combination of *Goto* and *Antman*. Those specific rejected claims require that the first database contain "records corresponding to biological information". Within the context of this patent application, the term "biological information" has a specific meaning. In a recent en banc decision, the Federal Circuit stated that:

> ... the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs.

Philips v. AWH Corporation, 415 F.3d 1303; 1316 (Fed. Cir. 2005). The specific meaning of the term "biological information" in the specification is information that related to the effects that a chemical compound has on the biological systems of humans or animals. Original Application, pg. 9, lines 18-19. Examples of those effects include side effects and toxicity. Original Application pg. 24. The concept of "biological information" for a compound only makes sense if the chemical compound is an extrinsic compound introduced into the biological system. Since the databases in *Goto* only appear to contain information related to compounds intrinsic to a biological system, the use of the term "biological information" in a claim should prevent that claim from applying to anything but extrinsic compounds.

In any case, Applicants assert that the amendments made to all of the independent claims rejected under the combination of *Goto* and *Antman* should make all of the claims rejected under those references that haven't been cancelled (claims 1-3, 10, 14-23, 27, 28, 33-43, 59-64, 70-76, 78, 80, 89-91, 93, 94, 97-105, 120, 121, 124, 125, 127-129, and 132, 139-142) allowable over those references.

Claims 1, 10, 17, 59, 67, 68, 79, 81-88, 92, 95, 108, 110, 122, 123, 144, and 145 stand rejected as allegedly being unpatentable over the combination of Ogata et al., "KEGG: Kyoto Encyclopedia of Genes and Genomes," NUCLEIC ACIDS RESEARCH, Vol. 27 no. 1, pgs.

29-34 (1999) ("*Ogata*") and *Antman*. Since *Ogata* and *Goto* both describe exactly the same system, the KEGG system, the remarks made in relation to the claims rejections based on the combination of *Goto* and *Antman* can be applied equally well to the claim rejections under the combination of *Ogata* and *Antman*. Similarly, the amendments made to the independent claims should also overcome the obviousness rejection based on *Ogata* and *Antman*. Please note that the rejection based on *Ogata* and *Antman* extends to two independent claims (claims 144 and 145) that were not rejected under *Goto* and *Antman*. Those two claims also contain the previously described amendments, so they should also be allowable over *Ogata* and *Antman*. Since all of the independent claims rejected under *Ogata* and *Antman* should now be allowable over the combination of those references, all of the claims depending from those claims should also be allowable over those references. Therefore Applicants assert that none of claims 1, 10, 17, 59, 67, 68, 79, 81-88, 92, 95, 108, 110, 122, 123, 144, and 145 are made obvious by the combination of *Ogata* and *Antman*.

Claims 1-3, 10, 14-23, 27, 28, 33-53, 59-64, 70-76, 78, 80, 89-91, 93, 94, 96-105, 107, 120, 121, 124, 125, 127-129, and 132-143 stand rejected over the combination of *Goto*, *Antman*, and Witzmann et al., "Induction of enoyl-CoA hydratase by LD50 exposure to perfluorocarboxylic acids detected by two-dimensional electrophoresis", TOXICOLOGY LETTERS 71 pgs. 271-277 (1994)("*Witzmann*"). This rejection is based on the assumption that the combination of *Goto* and *Antman* make all of the rejected claims unpatentable except for claims 96 and 107, and *Witzmann* covers the additional limitations in those claims. Since, as previously discussed, Applicants assert that *Goto* and *Antman* do not make obvious any of the claims on which claims 96 and 107 depend, the combination of *Goto*, *Antman*, and *Witzmann* cannot make claims 96 and 107 obvious.

Claims 1-3, 10, 14-23, 27, 28, 33-53, 59-64, 70-76, 78, 80, 89-91, 93, 94, 97-105, 120, 121, 124, 125, 126-129, and 132-143 stand rejected over the combination of *Goto*, *Antman*, and Schena et al., "Parallel human genome analysis: Microarray-based expression monitoring of 1000 genes", PROC. NATL. ACAD. SCI. USA Vol. 93 pgs. 10614-10619 (1996)("*Schena*"). This rejection is based on the assumption that the combination of *Goto* and *Antman* make all of the

rejected claims unpatentable except for claim 126, and *Schena* covers the additional limitations in that claim. Since, as previously discussed, Applicants assert that *Goto* and *Antman* do not make obvious any of the claims on which claim 126 depends, the combination of *Goto*, *Antman*, and *Schena* cannot make claims 96 and 107 obvious.

Conclusion

For the foregoing reasons, Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned attorney.

Respectfully submitted,

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service as First Class Mail in an envelope addressed to: M/S Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on **February 27, 2006** by Debra Burns.

Signed: Debra B. Burns

Form Paragraph 7.43 can be used to state the objection.

¶ 7.43 Objection to Claims, Allowable Subject Matter

Claim [1] objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

608.01(o) Basis for Claim Terminology in Description

The meaning of every term used in any of the claims should be apparent from the descriptive portion of the specification with clear disclosure as to its import; and in mechanical cases, it should be identified in the descriptive portion of the specification by reference to the drawing, designating the part or parts therein to which the term applies. A term used in the claims may be given a special meaning in the description. No term may be given a meaning repugnant to the usual meaning of the term.

Usually the terminology of the original claims follows the nomenclature of the specification, but sometimes in amending the claims or in adding new claims, new terms are introduced that do not appear in the specification. The use of a confusing variety of terms for the same thing should not be permitted.

New claims and amendments to the claims already in the case should be scrutinized not only for new matter but also for new terminology. While an applicant is not limited to the nomenclature used in the application as filed, he or she should make appropriate amendment of the specification whenever this nomenclature is departed from by amendment of the claims so as to have clear support or antecedent basis in the specification for the new terms appearing in the claims. This is necessary in order to insure certainty in construing the claims in the light of the specification, *Ex parte Kotler*, 1901 C.D. 62, 95 O.G. 2684 (Comm'r Pat. 1901). See 37 CFR 1.75, MPEP § 608.01(i) and § 1302.01.

The specification should be objected to if it does not provide proper antecedent basis for the claims by using Form Paragraph 7.44.

¶ 7.44 Claimed Subject Matter Not in Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: [1]

608.01(p) Completeness [R-1]

Newly filed applications obviously failing to disclose an invention with the clarity required are discussed in MPEP § 702.01.

A disclosure in an application, to be complete, must contain such description and details as to enable any person skilled in the art or science to which the invention pertains to make and use the invention as of its filing date. *In re Glass*, 492 F.2d 1228, 181 USPQ 31 (CCPA 1974).

While the prior art setting may be mentioned in general terms, the essential novelty, the essence of the invention, must be described in such details, including proportions and techniques, where necessary, as to enable those persons skilled in the art to make and utilize the invention.

Specific operative embodiments or examples of the invention must be set forth. Examples and description should be of sufficient scope as to justify the scope of the claims. *Markush* claims must be provided with support in the disclosure for each member of the *Markush* group. Where the constitution and formula of a chemical compound is stated only as a probability or speculation, the disclosure is not sufficient to support claims identifying the compound by such composition or formula.

A complete disclosure should include a statement of utility. This usually presents no problem in mechanical cases. In chemical cases, varying degrees of specificity are required.

A disclosure involving a new chemical compound or composition must teach persons skilled in the art how to make the compound or composition. Incomplete teachings may not be completed by reference to subsequently filed applications.

For "Guidelines For Examination Of Applications For Compliance With The Utility Requirement of 35 U.S.C. 101," see MPEP § 706.03(a)(1).

For "General Principles Governing Utility Rejections," see MPEP § 2107.

For a discussion of the utility requirement under 35 U.S.C. 112, first paragraph, in drug cases, see MPEP § 2107.02 and § 2164.06(a).

For "Procedural Considerations Related to Rejections for Lack of Utility," see MPEP § 2107.01.

For "Special Considerations for Asserted Therapeutic or Pharmacological Utilities," see MPEP § 2107.02.

I. INCORPORATION BY REFERENCE

The Commissioner has considerable discretion in determining what may or may not be incorporated by reference in a patent application. *General Electric Co. v. Brenner*, 407 F.2d 1258, 159 USPQ 335 (D.C. Cir. 1968). The incorporation by reference practice with respect to applications which issue as U.S. patents provides the public with a patent disclosure which minimizes the public's burden to search for and obtain copies of documents incorporated by reference which may not be readily available. Through the Office's incorporation by reference policy, the Office ensures that reasonably complete disclosures are published as U.S. patents. The following is the manner in which the Commissioner has elected to exercise that discretion. Section A provides the guidance for incorporation by reference in applications which are to issue as U.S. patents. Section B

provides guidance for incorporation by reference in benefit applications; i.e., those domestic (35 U.S.C. 120) or foreign (35 U.S.C. 119(a)) applications relied on to establish an earlier effective filing date.

A. *Review of Applications Which Are To Issue as Patents.*

An application as filed must be complete in itself in order to comply with 35 U.S.C. 112. Material nevertheless may be incorporated by reference, *Ex parte Schwarze*, 151 USPQ 426 (Bd. App. 1966). An application for a patent when filed may incorporate "essential material" by reference to (1) a U.S. patent or (2) a pending U.S. application, subject to the conditions set forth below.

"Essential material" is defined as that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode (35 U.S.C. 112). In any application which is to issue as a U.S. patent, essential material may not be incorporated by reference to (1) patents or applications published by foreign countries or a regional patent office, (2) non-patent publications, (3) a U.S. patent or application which itself incorporates "essential material" by reference, or (4) a foreign application.

Nonessential subject matter may be incorporated by reference to (1) patents or applications published by the United States or foreign countries or regional patent offices, (2) prior filed, commonly owned U.S. applications, or (3) non-patent publications >however, hyperlinks and/or other forms of browser executable code cannot be incorporated by reference. See MPEP § 608.01<. Nonessential subject matter is subject matter referred to for purposes of indicating the background of the invention or illustrating the state of the art.

Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. *In re de Seversky*, 474 F.2d 671, 177 USPQ 144 (CCPA 1973). In addition to other requirements for an application, the referencing application should include an identification of the referenced patent, application, or publication. Particular attention should be directed to specific portions of the referenced document where the subject matter being incorporated may be found. Guidelines for situations where applicant is permitted to fill in a number for Application No. _____ left blank in the application as filed can be found in *In re Fouche*, 439 F.2d 1237, 169 USPQ 429 (CCPA 1971) (Abandoned applications less than 20 years old can be incorporated by reference to the same extent as copending applications; both types are open to the public upon the referencing application issuing as a patent. See MPEP § 103).

1. Complete Disclosure Filed

If an application is filed with a complete disclosure, essential material may be canceled by amendment and may be substituted by reference to a U.S. patent or an earlier filed pending U.S. application. The amendment must be accompanied by an affidavit or declaration signed by the applicant, or a practitioner representing the applicant, stating that the material canceled from the application is the same material that has been incorporated by reference.

If an application as filed incorporates essential material by reference to a U.S. patent or a pending and commonly owned U.S. application, applicant may be required prior to examination to furnish the Office with a copy of the referenced material together with an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the copy consists of the same material incorporated by reference in the referencing application. However, if a copy of a printed U.S. patent is furnished, no affidavit or declaration is required.

Prior to allowance of an application that incorporates essential material by reference to a pending U.S. application, the examiner shall determine if the referenced application has issued as a patent. If the referenced application has issued as a patent, the examiner shall enter the U.S. Patent No. of the referenced application in the specification of the referencing application (see MPEP § 1302.04). If the referenced application has not issued as a patent, applicant will be required to amend the disclosure of the referencing application to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating the amendatory material consists of the same material incorporated by reference in the referencing application.

2. Improper Incorporation

The filing date of any application wherein essential material is improperly incorporated by reference to a foreign application or patent or to a publication will not be affected because of the reference. In such a case, the applicant will be required to amend the specification to include the material incorporated by reference. The following form paragraphs may be used.

¶ 6.19 Incorporation by Reference, Foreign Patent or Application

The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same

material incorporated by reference in the referencing application. *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

¶ 6.19.01 Improper Incorporation by Reference, General

The attempt to incorporate subject matter into this application by reference to **[1]** is improper because **[2]**.

Examiner Note:

1. In bracket 1, identify the document such as an application or patent number or other identification.

2. In bracket 2, give reason why it is improper.

The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

Reliance on a commonly assigned copending application by a different inventor may ordinarily be made for the purpose of completing the disclosure. See *In re Fried*, 329 F.2d 323, 141 USPQ 27 (CCPA 1964), and *General Electric Co. v. Brenner*, 407 F.2d 1258, 159 USPQ 335 (D.C. Cir. 1968).

Since a disclosure must be complete as of the filing date, subsequent publications or subsequently filed applications cannot be relied on to establish a constructive reduction to practice or an enabling disclosure as of the filing date. *White Consol. Indus., Inc. v. Vega Servo-Control, Inc.*, 713 F.2d 788, 218 USPQ 961 (Fed. Cir. 1983); *In re Scarbrough*, 500 F.2d 560, 182 USPQ 298 (CCPA 1974); *In re Glass*, 492 F.2d 1228, 181 USPQ 31 (CCPA 1974).

B. Review of Applications Which Are Relied on To Establish an Earlier Effective Filing Date.

The limitations on the material which may be incorporated by reference in U.S. patent applications which are to issue as U.S. patents do not apply to applications relied on only to establish an earlier effective filing date under 35 U.S.C. 119 or 35 U.S.C. 120. Neither 35 U.S.C. 119(a) nor 35 U.S.C. 120 places any restrictions or limitations as to how the claimed invention must be disclosed in the earlier application to comply with 35 U.S.C. 112, first paragraph. Accordingly, an application is entitled to rely upon the filing date of an earlier application, even if the earlier application itself incorporates essential material by reference to another document. See *Ex parte Maziere*, 27 USPQ2d 1705, 1706-07 (Bd. Pat. App. & Inter. 1993).

The reason for incorporation by reference practice with respect to applications which are to issue as U.S. patents is to provide the public with a patent disclosure which minimizes the public's burden to search for and obtain copies of documents incorporated by reference which may not be readily available. Through the Office's incorporation by reference policy, the Office ensures that reasonably complete disclosures are published as U.S. patents. The same policy concern does not apply where the sole purpose for which an applicant relies on an earlier U.S. or foreign application is to establish an earlier filing date. Incorporation by reference in the earlier application of (1) patents or applications published by foreign countries or regional patent offices, (2) nonpatent publications, (3) a U.S. patent or application which itself incorporates "essential material" by reference, or (4) a foreign application, is not critical in the case of a "benefit" application.

When an applicant, or a patent owner in a reexamination or interference, claims the benefit of the filing date of an earlier application which incorporates material by reference, the applicant or patent owner may be required to supply copies of the material incorporated by reference. For example, an applicant may claim the benefit of the filing date of a foreign application which itself incorporates by reference another earlier filed foreign application. If necessary, due to an intervening reference, applicant should be required to supply a copy of the earlier filed foreign application, along with an English language translation. A review can then be made of the foreign application and all material incorporated by reference to determine whether the foreign application discloses the invention sought to be patented in the manner required by the first paragraph of 35 U.S.C. 112 so that benefit may be accorded. *In re Gosteli*, 872 F.2d 1008, 10 USPQ2d 1614 (Fed. Cir. 1989).

II. SIMULATED OR PREDICTED TEST RESULTS OR PROPHETIC EXAMPLES

Simulated or predicted test results and prophetical examples (paper examples) are permitted in patent applications. Working examples correspond to work actually performed and may describe tests which have actually been conducted and results that were achieved. Paper examples describe the manner and process of making an embodiment of the invention which has not actually been conducted. Paper examples should not be represented as work actually done. No results should be represented as actual results unless they have actually been achieved. Paper examples should not be described using the past tense.

For problems arising from the designation of materials by trademarks and trade names, see MPEP § 608.01(v).

(A) The first application and the alleged continuation-in-part application were filed with at least one common inventor;

(B) The alleged continuation-in-part application was "filed before the patenting or abandonment of or termination of proceedings on the first application or an application similarly entitled to the benefit of the filing date of the first application"; and

(C) The alleged continuation-in-part application "contains or is amended to contain a specific reference to the earlier filed application."

For notation to be put on the file wrapper by the examiner in the case of a continuation-in-part application see MPEP § 202.02. See MPEP § 708 for order of examination.

Use Form Paragraph 2.06 to remind applicant of possible continuation-in-part status.

¶ 2.06 Possible Status as Continuation-in-Part

This application repeats a substantial portion of prior Application No. [1], filed [2], and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

Examiner Note:

1. This paragraph should only be used when it appears that the application may qualify as a continuation-in-part, but no priority claim has been perfected.

2. An application claiming the benefits of a provisional application under 35 U.S.C. 119(e) should not be called a "continuation" of the provisional application since the application will have its patent term calculated from its filing date, whereas an application filed under 35 U.S.C. 120, 121, or 365(c) will have its term calculated from the date on which the earliest application was filed, provided a specific reference is made to the earlier filed application(s), 35 U.S.C. 154(a)(2) and (a)(3).

201.09 Substitute Application

The use of the term "Substitute" to designate any application which is in essence the duplicate of an application by the same applicant abandoned before the filing of the later application, finds official recognition in the decision *Ex parte Komenak*, 1940 C.D. 1, 512 O.G. 739 (Comm'r Pat. 1940). Current practice does not require applicant to insert in the specification reference to the earlier application; however, attention should be called to the earlier application. The notation on the file wrapper (see MPEP § 202.02) that one application is a "Substitute" for another is printed in the heading of the patent copies. See MPEP § 202.02.

As is explained in MPEP § 201.11, a "Substitute" does not obtain the benefit of the filing date of the prior application.

Use Form Paragraph 2.07 to remind applicant of possible substitute status.

¶ 2.07 Definition of a Substitute

Applicant refers to this application as a "substitute" of Application No. [1], filed [2]. The use of the term "substitute" to designate an application which is in essence the duplicate of an application by the same applicant abandoned before the filing of the later case finds official recognition in the decision, *Ex parte Komenak*, 1940 C.D. 1, 512 O.G. 739 (Comm'r Pat. 1940). The notation on the file wrapper (See MPEP § 202.02) that one case is a "substitute" for another is printed in the heading of the patent copies. A "substitute" does not obtain the benefit of the filing date of the prior application.

201.10 Refile

No official definition has been given the term "Refile," though it is sometimes used as an alternative for the term "Substitute."

If the applicant designates his or her application as "Refile" and the examiner finds that the application is in fact a duplicate of a former application by the same party which was abandoned prior to the filing of the second application, the examiner should require the substitution of the word "substitute" for "refile", since the former term has official recognition.

Use Form Paragraph 2.08 to remind applicant of possible refile status.

¶ 2.08 Definition of a Refile

It is noted that applicant refers to this application as a "refile." No official definition has been given the term "refile," though it is sometimes used as an alternative for the term "substitute." Since this application appears to be in fact a duplicate of a former application which was abandoned prior to the filing of the second case, the substitution of the word "substitute" for "refile" is required since the term "substitute" has official recognition. Applicant is required to make appropriate corrections.

201.11 Continuity Between Applications: When Entitled to Filing Date [R-1]

Under certain circumstances an application for patent is entitled to the benefit of the filing date of a prior nonprovisional application or provisional application which has at least one common inventor. The conditions are specified in 35 U.S.C. 120 and 35 U.S.C. 119(e).

35 U.S.C. 120. Benefit of earlier filing date in the United States.

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

35 U.S.C. 119. Benefit of earlier filing date; right of priority.

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**>

(e)(1)An application for patent filed under section 111(a) or section 363 of this title for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in a provisional application filed under section 111(b) of this title, by an inventor or inventors named in the provisional application, shall have the same effect, as to such invention, as though filed on the date of the provisional application filed under section 111(b) of this title, if the application for patent filed under section 111(a) or section 363 of this title is filed not later than 12 months after the date on which the provisional application was filed and if it contains or is amended to contain a specific reference to the provisional application.

(2) A provisional application filed under section 111(b) of this title may not be relied upon in any proceeding in the Patent and Trademark Office unless the fee set forth in subparagraph (A) or (C) of section 41(a)(1) of this title has been paid.

(3) If the day that is 12 months after the filing date of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, the period of pendency of the provisional application shall be extended to the next succeeding secular or business day.<

There are four conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 or under 35 U.S.C. 119(e).

(A) The second application must be an application for a patent for an invention which is also disclosed in the first application (the parent or original nonprovisional application or provisional application); the disclosure of the invention in the first application and in the second application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Prods., Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

Form Paragraphs 2.09 and 2.10 should be used where the disclosure of the second application is not for an invention disclosed in the first application.

¶ 2.09 Heading for Conditions for Domestic Priority Under 35 U.S.C. 119(e) or 120

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. **[1]** as follows:

Examiner Note:

1. In bracket 1, insert either or both --119(e)-- or --120--.
2. One or more of the following form paragraphs 2.10 to 2.12 must follow depending upon the circumstances.

¶ 2.10 Disclosure Must Be the Same

The second application must be an application for a patent for an invention which is also disclosed in the first application (the parent or provisional application); the disclosure of the invention in the parent application and in the second application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

Examiner Note:

1. This paragraph must be preceded by heading paragraph 2.09.
2. Form paragraph 2.29 should be used where the claim(s) of the nonprovisional application lack(s) support in the disclosure of the provisional application.

¶ 2.29 Domestic Priority Not Granted

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claim **[1]** of this application. **[2]**

Examiner Note:

1. This form paragraph may be used when there is lack of support in the provisional application for the pending claims in the nonprovisional application.
2. In bracket 2, provide an explanation of lack of support.

(B) The second application must be copending with the first application or with an application similarly entitled to the benefit of the filing date of the first application. With respect to provisional applications, **>effective November 29, 1999, Public Law 106-113 amended 35 U.S.C. 119(e)(2) to eliminate the copendency requirement for a nonprovisional application claiming benefit of a provisional application. However, pursuant to 35 U.S.C. 119(e)(1), the nonprovisional application must be filed not later than 12 months after the date on which the provisional application was filed. If the day that is 12 months after the filing date of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, the period of pendency of the provisional application is extended to the next succeeding business day and the nonprovisional application may be filed on that next succeeding business day. See 35 U.S.C. 119(e)(3) and MPEP § 201.04(b) and § 505.<

(C) The second application must contain a specific reference to the prior application(s) in the specification.

A request for a continued prosecution application (CPA) filed under 37 CFR 1.53(d) is itself the specific reference required by 35 U.S.C. 120 and 37 CFR 1.78(a)(2) to every application assigned the same application number identified in the request. (Note: The CPA is assigned the same application number as the prior application.) In a CPA, a specific reference in the first sentence of the specification following the title to a prior application assigned the same application number is not required and should not be made. No amendment in a CPA may delete the specific reference to the prior application assigned the same application number. A specific reference to an application not assigned the same application number, but relied on for benefit under 35 U.S.C. 120 and 37 CFR 1.78(a)(2) is required. Cross references to other related applications not assigned the same application as the CPA may be made when appropriate.

Form Paragraphs 2.09 and 2.12 are required to be used to indicate reference to the prior application.

¶ 2.12 Application Must Contain a Reference to Parent

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification (37 CFR 1.78).

Examiner Note:

1. This paragraph must be preceded by heading paragraph 2.09.

2. This paragraph should not be used for a continued prosecution application (CPA). In a continued prosecution application (CPA) filed under 37 CFR 1.53(d), a specific reference in the first sentence of the specification to the prior application is not required and should not be made. The specific reference requirement of 35 U.S.C. 120 is met by the transmittal request for the CPA which is considered to be part of the CPA application (37 CFR 1.53(d)(2)(iv) and (d)(7)).

(D) The second application must be filed by an inventor or inventors named in the previously filed application.

COPENDENCY

Copendency is defined in the clause which requires that the second application must be filed before (1) the patenting, or (2) the abandonment of, or (3) the termination of proceedings in the first application. **>With respect to provisional applications, Public Law 106-113 amended 35 U.S.C. 119(e)(2) to eliminate the copendency requirement for a nonprovisional application claiming benefit of a provisional application. 35 U.S.C. 119(e)(2) as amended by Public Law 106-113 is effective as of November 29, 1999 and applies to any provisional applications filed on or after June 8, 1995 but has no effect on any patent which is the subject of litigation in an action commenced before November 29, 1999.<

Use Form Paragraphs 2.09 and 2.11 to indicate copendency is required.

¶ 2.11 Application Must Be Copending With Parent

An application in which the benefits of an earlier application are desired must be copending with the prior application or with an application similarly entitled to the benefit of the filing date of the prior application.

Examiner Note:

This paragraph must be preceded by heading paragraph 2.09.

If the first application issues as a patent, it is sufficient for the second application to be copending with it if the second application is filed on the same date, or before the date that the patent issues on the first application. **>Thus, the second application may be filed under 37 CFR 1.53(b) while the first is still pending before the examiner, or is in issue, or even between the time the issue fee is paid and the patent issues. In view of the new patent publication process, it is anticipated that utility patents will be published within four weeks of payment of the issue fee. Applicants are encouraged to file any continuing applications no later than the date the issue fee is paid, to avoid issuance of the first application before the continuing application is filed.<

If the first application is abandoned, the second application must be filed before the abandonment in order for it to be copending with the first. The term "abandoned," refers to abandonment for failure to prosecute (MPEP § 711.02), express abandonment (MPEP § 711.01), and abandonment for failure to pay the issue fee (37 CFR 1.316).**

The expression "termination of proceedings" includes the situations when an application is abandoned or when a patent has been issued, and hence this expression is the broadest of the three.

After a decision by the Court of Appeals for the Federal Circuit in which the rejection of all claims is affirmed, proceedings are terminated on the date of receipt of the Court's certified copy of the decision by the Patent and Trademark Office. *Continental Can Company, Inc. v. Schuyler*, 168 USPQ 625 (D.D.C. 1970). There are several other situations in which proceedings are terminated as is explained in MPEP § 711.02(c).

When proceedings in an application are terminated, the application is treated in the same manner as an abandoned application, and the term "abandoned application" may be used broadly to include such applications.

The term "continuity" is used to express the relationship of copendency of the same subject matter in two different applications of the same inventor. The second application may be referred to as a continuing application when the first application is not a provisional application. Continuing applications include those applications which are called divisions, continuations, and continuations-in-part. As far as the right under the statute is concerned the name used is immaterial, the names being merely expressions developed for convenience. The statute is so worded that the first application may contain more than the second, or the second application may contain more than the first, and in either case the second application is entitled to the benefit of the filing date of the first as to the common subject matter.

REFERENCE TO FIRST APPLICATION

The third requirement of the statute is that the second (or subsequent) application must contain a specific reference to the first application. This should appear as the first sentence of the specification following the title preferably as a separate paragraph (37 CFR 1.78(a)).

A request for a continued prosecution application (CPA) filed under 37 CFR 1.53(d) is itself the specific reference required by 35 U.S.C. 120 and 37 CFR 1.78(a)(2) to every application assigned the same application number identified in the request. (Note: The CPA is assigned the same application number as the prior application.) In a CPA, a specific reference in the first sentence of the specification following the title to a prior application assigned the same

application number is not required and should not be made. No amendment in a CPA may delete the specific reference to the prior application assigned the same application number. A specific reference to an application not assigned the same application number, but relied on for benefit under 35 U.S.C. 120 and 37 CFR 1.78(a)(2) is required. Cross references to other related applications not assigned the same application as the CPA may be made when appropriate.

When *>a< nonprovisional application >(other than a CPA)< is entitled under 35 U.S.C. 120 to an earlier U.S. effective filing date, a statement such as "This is a division (continuation, continuation-in-part) of Application No. ---, filed ---" should appear as the first sentence of the description, except in the case of design applications where it should appear as set forth in MPEP § 1504.20. >In the case of an application filed under 37 CFR 1.53(b) as a division, continuation or continuation-in-part of a CPA, there should be only one reference to the series of applications assigned the same application number, with the filing date cited being that of the original noncontinued application.< Where a nonprovisional application is claiming the benefit under 35 U.S.C. 120 of a prior national stage application filed under 35 U.S.C. 371, a suitable reference would read "This application is a continuation of U.S. Application No. 08/---, filed ---, which was the National Stage of International Application No. PCT/DE95/---, filed ---." When the nonprovisional application is entitled to an earlier U.S. effective filing date of one or more provisional applications under 35 U.S.C. 119(e), a statement such as "This application claims the benefit of U.S. Provisional Application No. 60/---, filed ---, and U.S. Provisional Application No. 60/ ---, filed ---." should appear as the first sentence of the description. In addition, for an application which is claiming the benefit under 35 U.S.C. 120 of a prior application, which in turn claims the benefit of a provisional application under 35 U.S.C. 119(e), a suitable reference would read, "This application is a continuation of U.S. Application No. 08/---, filed ---, now abandoned, which claims the benefit of U.S. Provisional Application No. 60/---, filed ---." Status of nonprovisional parent applications (whether it is patented or abandoned) should also be included. If a parent application has become a patent, the expression, "Patent No. _ _ " should follow the filing date of the parent application. If a parent application has become abandoned, the expression "abandoned" should follow the filing date of the parent application. In the case of design applications, it should appear as set forth in MPEP § 1504.20. In view of this requirement, the right to rely on a prior application may be waived or refused by an applicant by refraining from inserting a reference to the prior application in the specification of the later one. If the examiner is aware of the fact that an application is a continuing application of a prior one, he or she should merely call attention to this in an Office action by using the wording of Form Paragraphs 2.15 or 2.16.

¶ 2.15 Reference to Parent Application, 35 U.S.C. 119(e) or 120 Benefit

If applicant desires priority under 35 U.S.C. [1] based upon a previously filed copending application, specific reference to the earlier filed application must be made in the instant application. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

Examiner Note:

1. In bracket 1, insert --119(e)-- or --120--.
2. In a continued prosecution application (CPA) filed under 37 CFR 1.53(d), a specific reference in the first sentence of the specification to the prior application is not required and should not be made. The specific reference requirement of 35 U.S.C. 120 is met by the transmittal request for the CPA which is considered to be part of the CPA application. 37 CFR 1.53(d)(2)(iv) and (d)(7).

¶ 2.16 Reference to Copending Application

It is noted that this application appears to claim subject matter disclosed in prior copending Application No. [1], filed [2]. A reference to the prior application must be inserted as the first sentence of the specification of this application if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See 37 CFR 1.78(a). Also, the current status of all nonprovisional parent applications referenced should be included.

Examiner Note:

In a continued prosecution application (CPA) filed under 37 CFR 1.53(d), a specific reference in the first sentence of the specification to the prior application is not required and should not be made. The specific reference requirement of 35 U.S.C. 120 is met by the transmittal request for the CPA which is considered to be part of the CPA application. 37 CFR 1.53(d)(2)(iv) and (d)(7).

If the examiner is aware of a prior application he or she should note it in an Office action, as indicated above, but should not require the applicant to call attention to the prior application.

In an application filed under former 37 CFR 1.60 applicant, in the amendment canceling the nonelected claims, should include directions to enter "This is a division (continuation) of application No. ....., filed ....." as the first sentence. Where the applicant has inadvertently failed to do this the wording of Form Paragraph 2.17 should be used. Where the application filed under former 37 CFR 1.60 is otherwise ready for allowance, the examiner should insert the quoted sentence by examiner's amendment.

Applications are sometimes filed with a division, continuation, or continuation-in-part oath or declaration, in which

the oath or declaration refers back to a prior application. If there is no reference in the specification, in such cases, the examiner should merely call attention to this fact in his or her Office action, utilizing the wording of Form Paragraph 2.17.

¶ 2.17 Reference in Continuation/Divisional Applications Under Former 37 CFR 1.60

This application filed under former 37 CFR 1.60 lacks the necessary reference to the prior application. A statement reading "This is a [1] of Application No. [2], filed [3]." should be entered following the title of the invention or as the first sentence of the specification. Also, the current status of all nonprovisional parent applications referenced should be included.

Examiner Note:

1. In bracket 1, insert either --division-- or --continuation--.
2. Use only in former 37 CFR 1.60 applications. For File Wrapper Continuing applications under former 37 CFR 1.62, use form paragraph 2.28.
3. Do not use if the prior application is a provisional application.
4. Do not use if the application is a continued prosecution application (CPA) filed under 37 CFR 1.53(d).

Where the applicant has inadvertently failed to make a reference to the parent application in an application filed under former 37 CFR 1.60 or 1.62 which is otherwise ready for issue, the examiner should insert the required reference by examiner's amendment.

Sometimes a pending application is one of a series of applications wherein the pending application is not copending with the first filed application but is copending with an intermediate application entitled to the benefit of the filing date of the first application. If applicant desires that the pending application have the benefit of the filing date of the first filed application he or she must, besides making reference in the specification to the intermediate application, also make reference in the specification to the first application. See *Hovlid v. Asari*, 305 F. 2d 747, 134 USPQ 162 (9th Cir. 1962); and *Sticker Indus. Supply Corp. v. Blaw-Knox Co.*, 405 F.2d 90, 160 USPQ 177 (7th Cir. 1968).

There is no limit to the number of prior applications through which a chain of copendency may be traced to obtain the benefit of the filing date of the earliest of a chain of prior copending applications. See *In re Henriksen*, 399 F2.d 253, 158 USPQ 224 (CCPA 1968).

A second application which is not copending with the first application, which includes those called substitutes in MPEP § 201.09, is not entitled to the benefit of the filing date of the prior application and the bars to the grant of a patent are computed from the filing date of the second application. An applicant is not required to refer to such applications in the specification of the later filed application, but is required to otherwise call the examiner's attention to the earlier application if it or its contents or prosecution are material as defined in 37 CFR 1.56(b). If the examiner is aware of such a prior abandoned application he or she should make a reference to it in an Office action in order that the record of the second application will show this fact.

If an applicant refers to a prior noncopending abandoned application in the specification, the manner of referring to it should make it evident that it was abandoned before filing the second.

For notations to be placed on the file wrapper in the case of continuing applications, see MPEP § 202.02 and § 1302.09.

Effective June 8, 1995, Public Law 103-465 amended 35 U.S.C. 154 to change the term of a patent to 20 years measured from the filing date of the earliest U.S. application for which benefit under 35 U.S.C. 120, 121, or 365(c) is claimed. The 20-year patent term applies to all utility and plant patents issued on applications filed on or after June 8, 1995. As a result of the 20-year patent term, it is expected, in certain circumstances, that applicants may cancel their claim to priority by amending the specification (no supplemental declaration is necessary) to delete any references to prior applications. In a continued prosecution application (CPA) filed under 37 CFR 1.53(d), no amendment may delete the specific reference to a prior application assigned the same application number. (Note: In the CPA, the request is the specific reference required by 35 U.S.C. 120 and 37 CFR 1.78(a)(2) to every application assigned the same application number identified in the request. Further, in a CPA, a specific reference in the first sentence of the specification following the title to a prior application assigned the same application number is not required and should not be made.) Upon entry of the amendment, the examiner must return the application to the Office of Initial Patent Examination (OIPE), accompanied by a completed OIPE Data Base Routing Slip, for correction of the file wrapper label and for updating the PALM data base. For 09/ series applications, it will not be necessary to forward the application to OIPE for correction of the parent application data in PALM. The correction or entry of the data in the PALM data base can be made by technical support staff of the examining group. Upon entry of the data, a new PALM bib-data sheet should be printed and placed in the file wrapper. See also MPEP § 707.05 and § 1302.09.

SAME INVENTOR OR INVENTORS

The statute also requires that the applications claiming benefit of the earlier filing date under 35 U.S.C. 119(e) or 120 be filed by an inventor or inventors named in the previously filed application or provisional application.

WHEN NOT ENTITLED TO BENEFIT OF FILING DATE

Where the first application (a nonprovisional application) is found to be fatally defective because of insufficient disclosure to support allowable claims, a second application filed as a "continuation-in-part" of the first application to supply the deficiency is not entitled to the benefit of the filing date of the first application. *Hunt Co. v. Mallinckrodt Chemical Works*, 177 F.2d 583, 587, 83 USPQ 277, 281 (2d Cir. 1949) and cases cited therein.

Any claim in a continuation-in-part application which is directed *solely* to subject matter adequately disclosed under 35 U.S.C. 112 in the parent nonprovisional application is entitled to the benefit of the filing date of the parent nonprovisional application. However, if a claim in a continuation-in-part application recites a feature which was not disclosed or adequately supported by a proper disclosure under 35 U.S.C. 112 in the parent nonprovisional application, but which was first introduced or adequately supported in the continuation-in-part application such a claim is entitled only to the filing date of the continuation-in-part application; *In re Chu,* 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995); *Transco Products, Inc. v. Performance Contracting Inc.,* 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994); *In re Von Lagenhoven*, 458 F.2d 132, 136, 173 USPQ 426, 429 (CCPA 1972); and *Chromalloy American Corp. v. Alloy Surfaces Co., Inc.*, 339 F. Supp. 859, 874, 173 USPQ 295, 306 (D. Del. 1972).

By way of further illustration, if the claims of a continuation-in-part application which are only entitled to the continuation-in-part filing date, "read on" such published, publicly used or sold, or patented subject matter (e.g., as in a genus- species relationship) a rejection under 35 U.S.C. 102 would be proper. Cases of interest in this regard are as follows: *Mendenhall v. Cedarapids Inc.*, 5 F.3d 1557, 28 USPQ2d 1081 (Fed. Cir. 1993); *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971); *In re Hafner*, 410 F.2d 1403, 161 USPQ 783 (CCPA 1969); *In re Ruscetta*, 255 F.2d 687, 118 USPQ 101 (CCPA 1958); *In re Steenbock*, 83 F.2d 912, 30 USPQ 45 (CCPA 1936); *Ex parte Hageman*, 179 USPQ 747 (Bd. App. 1971)>.<

201.11(a) Filing of Continuation or Continuation-in-Part Application During Pendency of International Application Designating the United States [R-1]

It is possible to file a U.S. national application under 35 U.S.C. 111(a) and 37 CFR 1.53(b) during the pendency (prior to the abandonment) of an international application which designates the United States without completing the requirements for entering the national stage under 35 U.S.C. 371(c). >See MPEP §1895.< The ability to take such action is based on provisions of the United States patent law. 35 U.S.C. 363 provides that "An international application designating the United States shall have the effect from its international filing date under article 11 of the treaty, of a national application for patent regularly filed in the Patent and Trademark Office...". 35 U.S.C. 371(d) indicates that failure to timely comply with the requirements of 35 U.S.C. 371(c) "shall be regarded as abandonment by the parties thereof...". It is therefore clear that an international application which designates the United States has the effect of a pending U.S. application from the international application filing date until its abandonment as to the United States. The first sentence of 35 U.S.C. 365(c) specifically provides that "In accordance with the conditions and requirements of section 120 of this title,... a national application shall be entitled to the benefit of the filing date of a prior international application designating the United States." The condition of 35 U.S.C. 120 relating to the time of filing requires the later application to be "filed before the patenting or abandonment of or termination of proceedings on the first application...". The filing of a continuation or continuation-in-part application of an international application may be useful to patent applicants where the oath or declaration required by 35 U.S.C. 371(c)(4) cannot be filed as required by 37 CFR 1.494* or 1.495. An applicant filing an application under 35 U.S.C. 111(a) and 37 CFR 1.53(b) may obtain additional time to file the oath or declaration under 37 CFR 1.53(f) and 1.136(a).

A continuing application under 35 U.S.C. 365(c) and 120 must be filed before the abandonment or patenting of the prior nonprovisional application. See 37 CFR 1.494 and 1.495.

201.12 Assignment Carries Title

Assignment of an original application carries title to any divisional, continuation, or reissue application stemming from the original application and filed after the date of assignment. See MPEP § 306. When the assignment is in a provisional application, see MPEP § 306.01.

201.13 Right of Priority of Foreign Application [R-1]

Under certain conditions and on fulfilling certain requirements, an application for patent filed in the United States may be entitled to the benefit of the filing date of a prior application filed in a foreign country, to overcome an intervening reference or for similar purposes. The conditions are specified in 35 U.S.C. 119(a)-(d).

Meta-analysis

From Wikipedia, the free encyclopedia
(Redirected from Meta analysis)

In statistics, a **meta-analysis** combines the results of several studies that address a set of related research hypotheses. The first meta-analysis was performed by Karl Pearson in 1904, in an attempt to overcome the problem of reduced statistical power in studies with small sample sizes; analyzing the results from a group of studies can allow more accurate data analysis.

Although meta-analysis is widely used in evidence-based medicine today, a meta-analysis of a medical treatment was not published until 1955. In the 1970s, more sophisticated analytical techniques were introduced in educational research, starting with the work of Gene V. Glass, Frank L. Schmidt, and John E. Hunter.

The online Oxford English Dictionary lists the first usage of the term in the statistical sense as 1976 by Glass. The statistical theory surrounding meta-analysis was greatly advanced by the work of Larry V. Hedges, Ingram Olkin, John E. Hunter, and Frank L. Schmidt.

Because the results from different studies investigating different independent variables are measured on different scales, the dependent variable in a meta-analysis is some standard measure of effect size. To describe the results of comparative experiments the usual effect size indicator is the standardized mean difference (*d*) which is the standard score equivalent to the difference between means, or an odds ratio if the outcome of the experiments is a dichotomous variable (success versus failure). A meta-analysis can be performed on studies that describe their findings in correlation coefficients, as for example, studies of the familiar relationship of intelligence. In these cases, the correlation itself is the indicator of the effect size. Nor is the method restricted to situations in which one or more variables is properly referred to as "dependent." For example, a meta-analysis could be performed on a collection of studies each of which attempts to estimate the incidence of left-handedness in various groups of people.

Results from studies are combined using different approaches. One approach frequently used in meta-analysis in health care research is termed 'inverse variance method'. The average effect size across all studies is computed as a weighted mean, whereby the weights are equal to the inverse variance of each studies' effect estimator. Larger studies and studies with less random variation are given greater weight than smaller studies.

Modern meta-analysis does more than just combine the effect sizes of a set of studies. It tests if the studies' outcomes show more variation than the variation that is expected because of sampling different research participants. If that is the case, study characteristics such as measurement instrument used, population sampled, or aspects of the studies' design are coded. These characteristics are then used as predictor variables to analyze the excess variation in the effect sizes. Some methodological weaknesses in studies can be corrected statistically. For example, it is possible to correct effect sizes or correlations for the downward bias due to measurement error or restriction on score ranges.

A weakness of the method is that sources of bias are not controlled by the method. A good meta-analysis of badly designed studies will still result in bad statistics. Robert Slavin has argued that only methodologically sound studies should be included in a meta-analysis, a practice he calls 'best evidence meta-analysis'. Other meta-analysts would include weaker studies, and add a study-level predictor variable that reflects the methodological quality of the studies to examine the effect of study quality on the effect size.

See also

- Simpson's paradox

- Selection bias
- Systematic review
- Study heterogeneity

Outspoken critics

- Ray Hyman

External links

- Effect Size and Meta-Analysis Software (http://www.clintools.com)
- Effect Size and Meta-Analysis (http://www.ericdigests.org/2003-4/meta-analysis.html)
- Meta-Analysis Research on Science Instruction (http://www.ericdigests.org/pre-922/meta.htm)
- Meta-Analysis in Educational Research (http://www.ericdigests.org/1992-5/meta.htm)
- Meta-Analysis: Methods of Accumulating Results Across Research Domains (http://www.lyonsmorris.com/MetaA/index.htm)
- The Cochrane Library (http://www.cochrane.org/reviews/clibintro.htm)
- Introduction to meta-analysis for systematic reviewers (http://ssrc.tums.ac.ir/SystematicReview/Meta-Analysis.asp)

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